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Andrea Karlin  
*Lamar University*

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# INTONATION IN ORAL READING AND READING COMPREHENSION

*Andrea Karlin, Ph.D.*

LAMAR UNIVERSITY

## Abstract

The purpose of this study was to investigate the relationship between intonation in oral reading and reading comprehension as measured by the cloze procedure. Subjects were 54 Black West Indies college students at the College of the Virgin Islands (1978-79), St. Thomas, U. S. Virgin Islands, who were United States Virgin Islanders. Each subject was recorded reading two passages. The recordings were analyzed to determine correct use of the three features of intonation, i.e., pitch, stress, and juncture, for United States Virgin Island Black West Indian speech. Bivariate correlations were computed to assess the relationship between each feature of intonation and reading comprehension. All possible combinations of pitch, stress, and juncture were subjected to multiple regression procedures to assess optimal weights for each variable. Results indicated no significant relationships. Implications of these findings suggest that additional research is needed to determine whether the dialectical difference or age of the sample may account for the non-significant results. Until these questions have been answered, measures other than the use of proper intonation must be used to assess reading comprehension. Suggested recommendations for future research include the use of content area material, the use of standard English speaking subjects of various ages, and the comparison of good and poor readers' use of intonation.

## INTONATION IN ORAL READING AND READING COMPREHENSION

Is intonation in oral reading an indicator of reading comprehension? Some linguists and students of reading have suggested it is (Fries, 1963; Lamb, 1977; Lefevre, 1964; Tyler, 1961; Smith, 1973; Pival, 1968; Pearson and Johnson, 1978).

Others say that reading comprehension is the primary requisite to efficient oral reading. Good phrasing, effective expression, and appropriate emphasis all depend on the reader's grasp of the meaning (Dallman, Rouch, Chang, DeBoer, 1974; Tinker and McCullough 1968; Lloyd, 1962; Heilman, 1977; Smith, Goodman and Meredith, 1970; Wardaugh, 1970; Ruddell, 1968). And there are others who believe that the quality of oral reading and reading comprehension are not necessarily related (Spache and Spache, 1977; Moffet and Wagner, 1976).

Apparently the issue of intonation in oral reading and reading comprehension is not settled. Very few data are available to support either position. Some research that investigated the question of intonation in oral reading and its relationship to reading comprehension indicates that there appears to be a relationship between aspects of intonation and reading comprehension (Fagan, 1975; Clay and Amlach, 1971; Means, 1969; Ehri and Wilce, 1974; Dearborn, Johnson and Carmichael, 1949). But other results do not support this relationship (Ahlvers, 1970; Coady and Scott, 1977; Page, 1976). However, most studies used children as subjects and it is possible that with other subjects the results might have been different.

This study is an attempt to provide more needed information about the relationship of oral reading and silent reading comprehension. The question is of sufficient importance because of its possible implication for the assessment of reading to warrant investigation.

In order to determine whether intonation in oral reading can be used to assess the reading comprehension of college students the following problems were considered:

1. To what extent is proper or correct pitch in oral reading related to the reading comprehension of college students?
2. To what extent is proper or correct stress in oral reading related to the reading comprehension of college students?
3. To what extent is proper or correct juncture in oral reading related to the reading comprehension of college students?
4. To what extent are proper or correct pitch, stress, juncture in combination related to the reading comprehension of college students?

It was hypothesized that the features of intonation in oral reading, i.e., pitch, stress, and juncture, individually and in combination are significantly related to reading comprehension and that they are useful measures of reading comprehension of college students.

#### Subjects and Procedures

Fifty-four Black West Indian college students at the College of the Virgin Islands, St. Thomas, U.S. Virgin Islands, (1978-1979) were the randomly selected subjects of the study. All the subjects had been in residence in the U. S. Virgin Islands for at least seven consecutive years and had English as a first language. To ensure that on one in the sample was unable to understand the test passages because of an inability to recognize words, a word recognition test was given and those persons not achieving 100% accuracy were eliminated as subjects.

Subjects read two reading passages orally into a cassette

tape player and took two cloze tests to evaluate reading comprehension. (Cloze tests, narrative passages, and the word recognition test are available upon request from the author.)

Data were collected on three independent and one dependent variables: proper use of pitch, stress, and juncture in oral reading and reading comprehension. Proper or correct use of pitch, stress, and juncture was evaluated by analyzing tapes of the reading of two passages by the 54 subjects and scoring them with criteria provided by Sprauve (1974). Two cloze tests were administered to assess students' reading comprehension. The data were analyzed with a Xerox Sigma 7 Computer using the "Statistical Package for the Social Sciences" (SPSS) (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1971). The Pearson Product Moment Correlation was the statistical method selected for assessing the relationship between the dependent and each independent variable. Coefficients were tested for significance and the coefficient of determination ( $r^2$ ) was used in this study as an indication of the strength of the relationship between variables. Multiple regression was the statistical technique utilized to describe the relationships between reading comprehension and juncture. Multiple regression coefficients (R) were tested for significance and the coefficients of multiple determination ( $R^2$ ) were analyzed for interpretive purposes.

Results  
Table 1  
Correlation Summary Table

Hypothesis	Dependent Variable = Reading Comprehension				Result
	Independent	Variable	$r$	$r^2$	
1	Pitch		.18	.03	NS*
2	Stress		.22	.05	NS
3	Juncture		.04	.00	NS

\*Indicates Non-Significant correlation ( $p = .05$ ).

Table 2  
Multiple Regression Summary Table

Hypothesis	Dependent Variable = Reading Comprehension				Results
	Independent	Variable	R	$R^2$	
4	Pitch & Stress		.27	.07	NS
5	Pitch & Juncture		.19	.04	NS
6	Stress & Juncture		.24	.06	NS
7	Pitch, Stress & Juncture		.29	.08	NS

1. The bivariate coefficient of the relationship between correct use of pitch and reading comprehension was  $r=.18$ . This correlation coefficient of .18 when squared indicates that correct pitch contributes only 3% of the variance in reading comprehension.

2. The bivariate correlation coefficient of the relationship between correct use of stress and reading comprehension was  $r=.22$ . This transforms to a  $r^2$  of .05 meaning only 5% of the variance in reading comprehension is contributed by correct stress.

3. The bivariate correlation coefficient of the relationship between the correct use of juncture and reading comprehension was  $r=.04$  which produced an  $r^2$  of .00.

4. The multiple regression coefficient between the correct use of pitch and stress in combination and reading comprehension was  $R = .27$ , which produces a coefficient of determination of .07. This  $R^2$  statistic indicates that 7 percent of the variance of the use of correct pitch and stress in combination contributes only 7% of the variance in reading comprehension.

5. The multiple regression coefficient between the correct use of pitch and juncture in combination and reading comprehension was  $R = .19$  and transforms to a coefficient of determination of .04, meaning that the use of correct pitch and juncture contribute only 4% of the variance in reading comprehension.

6. The multiple regression coefficient between reading comprehension and the use of stress and juncture in combination yielded an  $R = .24$  which when squared, produced a coefficient of determination of .06, meaning that correct stress and juncture in combination contributed only 6% of the variation in reading comprehension.

7. The multiple regression coefficient between reading comprehension and the correct use of pitch, stress, and juncture in combination was  $R = .29$ , which produced a coefficient of determination of .08. This  $R^2$  statistic indicates that only 8% of the variance of the use of correct pitch, stress, and juncture in combination with one another was associated with reading comprehension. None of the correlations met the established level of significance.

#### Conclusions and Discussion

The four problems that were investigated in this study yielded consistent evidence that the three features of intonation, i.e., pitch, stress, and juncture are not related to the reading comprehension of U.S. Virgin Islands Black West Indian college students who were the sample of the study. The results clearly and consistently indicate that measures other than the use of proper intonation must be used to assess the reading comprehension of like samples of students. The investigator can only speculate why the results of this study yielded consistently non-significant relationships between reading comprehension and all measures of intonation.

It is possible that the students who were the subjects of the study, because of their experience with English had a sufficient knowledge of the syntax and structure of the language, and

that this knowledge enabled them to read using proper intonation, regardless of their understanding of the material. Their knowledge of redundancy of the language and their ability to chunk (focusing on a group of words rather than individual words) could account for the results that were obtained.

Another condition which may have had an effect on the results is the fact that the subjects were dialectically different. It is possible that because these students were required to read orally in an academic setting, they may have tried to read in a manner which would imitate standard speech, therefore violating their natural speech patterns for pitch, stress, and juncture—for which they were judged. The researchers deleted cases from the study in which this was apparent. However, the presence of this effect must be taken into consideration even though attempts were made to control for it.

The two narrative passages selected for this study were chosen in part because of the students' lack of familiarity with the contents of either passage. In the future, researchers might choose passages known to be difficult for a college sample, e.g., content area material such as science, philosophy, etc., and narrative material such as that written by Camus or Faulkner. The difficulty and nature of the material would add an additional component that could be useful in a replication of the study.

In this study a random sample of college students was selected without assessing the students' reading level. In the future, a comparison of good and poor reading at different reading levels could yield important differences affecting research outcomes. And investigators might want to concern themselves with the number and quality of miscues and their relationship to intonation patterns and comprehension.

Because of the results obtained in this and other studies of reading comprehension and intonation, teachers must be careful not to stereotype a reader as being able or unable to comprehend the material from the way it is read orally. Additional investigations with different age groups, speakers and materials are needed to determine whether intonation is an indicator of reading comprehension and can be used to assess it.

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